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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/821,684

04/09/2004

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7590

02/28/2005

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EXAMINER

MCCLLOUD, RENATA D

ART UNIT

PAPER NUMBER

2837

DATE MAILED: 02/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/821,684

Applicant(s)

ANWAR ET AL.

Examiner

Renata McCloud

Art Unit

2837

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>04/09/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claims 3,4, and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3: It is unclear how a first switch is connected between itself (a first switch) and a diode.

Claim 4: it is unclear how a second switch is connected between itself (a second switch) and a diode.

Claim 13: It is unclear how a first switch is connected between itself (a first switch) and a second switch.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-29 are rejected under 35 U.S.C. 102(b) as being anticipated by
Guerrera (US 5923152).

Claim 1: A system comprising a plurality of phases, each phase including a plurality of machine coils (Fig. 5: 44a, 44b); a plurality of positive side switch circuits (46,80) in electrical parallel connection, wherein each positive side switch circuit is electrically connected to a positive side of a machine coil (+ sides of 44a, 44b) of the plurality of machine coils (44a, 44b) and configured to control the flow of current through the machine coil; and a plurality of negative side switch circuits (40,88) in electrical parallel connection, wherein each negative side switch circuit is electrically connected to a negative side of a machine coil (44a,44b) of the plurality of machine coils (44a, 44b) and configured to control the flow of current through the machine coil.

Claim 2: each positive side switch circuit includes a first power switch (Fig. 2:46,80) and a first diode (62,92), and each negative side switch circuit includes a second power switch (40,88) and a second diode (54,90).

Claim 3: the first power switch (46,80) is in electrical connection with the positive side of the machine coil between the first power switch and the first diode (62,92).

Claim 4: the second power switch (40,88) is in electrical connection with the negative side of the machine coil between the second power switch (40,88) and the second diode (54,90).

Claims 5, 23 : the first and second power switches are MOSFET'S (Col. 2:52-55).

Claims 6, 24: the first and second power switches are N-channel MOSFETS (Col. 2:52-55).

Claims 7, 25: a source of the first power switch (46,80) is in electrical communication with a cathode of the first diode (62,92) and a drain of the second power switch (40,88) is in communication with an anode of the second diode (54,90).

Claims 8, 26: a power source (Fig. 2: Vin), wherein a first side of the power source is in electrical communication with a drain of the first power switch (46,80) and cathode of the second diode (54,90) and a second side of the power source is in electrical communication with an anode of the first diode (62,92) and a source of the second power switch (40,88).

Claims 9 : a first capacitor (52,84) in electrical parallel connection with the first power switch (46,80) and the first diode (62,92) between a drain of the first power (46,80) switch and an anode of the first diode (62,92).

Claim 10: a second capacitor (50,86) in electrical parallel connection with a second power switch (40,88) between a source of the second power switch (40,88) and a cathode of the second diode (54,90).

Claim 11: the first capacitor (52,84) is mounted in close proximity to the first power switch (46,80) and the second capacitor (50,86) is mounted in close proximity to the second power switch (40,88), wherein the first and second capacitors (52,84,50,86) are configured to provide DC transients line filtering and snubbing of switch off transients (abstract).

Claim 12: each positive side switch circuit includes a first and second power switch (46,80) in electrical series connection and each in negative side switch circuit includes a third and fourth power switch (40,88) in electrical series connection (Fig. 5).

Claim 13: the first power switch (46) is in electrical connection with a positive side of the machine coil between the first and second power switch (46,80)

Claim 14: the second power switch (80) is in electrical connection with a negative side of the coil between the third and fourth power switch (Fig. 5:40,88)

Claim 15: the first, second, third, and fourth power switches are MOSFET'S.
(Col. 2:52-55).

Claim 16: the first, second, third, and fourth power switches are N-channel MOSFETS (Col. 2:52-55).

Claim 17: a source of the first power switch (46) is in electrical communication with a drain of the second power switch (40) and a drain of the third power switch (80) is in communication with a source of the fourth power switch (88).

Claim 18: a power source (12), wherein a first side of the power source is in electrical communication with a drain of the first power switch (46) and source of the third power switch (40) and a second side of the power source is in electrical communication with a drain of the second power (80) switch and a source of the fourth power switch (88).

Claims 19, 27: a first capacitor (52) in electrical parallel connection with the first and second power switch (46,80) between a drain of the first power switch (46) and a source of the second power switch (80) further comprising a second capacitor (50) in electrical parallel connection with the third and fourth power switch (40,88) between a source of the third power switch and a drain of the fourth power switch.

Claims 20, 28: a second capacitor (84) in electrical parallel connection with the third and fourth power switch (40,88) between a source of the third power switch and a drain of the fourth power switch.

Claims 21, 29: the first capacitor (52) is mounted in close proximity to the first and second power switch (46,80) and the second capacitor (84) is mounted in close proximity to the third and fourth power switch (40,88), wherein the first and second capacitors are configured to provide DC line filtering and snubbing of switch off transients.

Claim 22: A system for controlling a switched reluctance machine, the system comprising a plurality of phases each phase including a plurality of machine coils (44a, 44b) ; a plurality of positive side switch circuits in electrical parallel connection, wherein each positive side switch circuit is electrically connected to a machine coil of the plurality of machine coils, each positive side switch circuit including a first power switch (46) and a first diode (62), the first power switch being in electrical connection with a positive side of the machine coil (Fig. 5: 44a) between the first power switch and the first diode and a plurality of negative side switch circuits in electrical parallel connection, wherein each negative side switch circuit is electrically connected to a machine coil of the plurality of machine coils, each negative side switch circuit including a second power switch (40) and a second diode (54), the second power switch (40) being in electrical connection with a negative side of the machine coil between the second power switch (40) and the second diode (54).

Art Unit: 2837

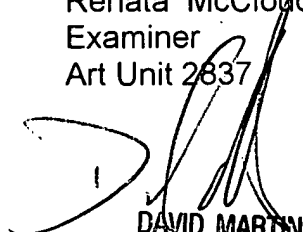
Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 8 am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Martin can be reached on (571) 272-2800 ext. 4. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RDM

Renata McCloud
Examiner
Art Unit 2837

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